

## **SEQUENCE LISTING**

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## SEQUENCE LISTING

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15	gac atg gtg gtc cag ctc att gac gac ttc aag att tca ggc atg aat Asp Met Val Val Gln Leu Ile Asp Asp Phe Lys Ile Ser Gly Met Asn 145 150 155	661
20	ggg ata cat gtc tgc atg gtc ttc gaa gta ctt ggc cac cat ctc ctc Gly Ile His Val Cys Met Val Phe Glu Val Leu Gly His His Leu Leu 160 165 170	709
25	aag tgg atc atc aaa tcc aac tat caa ggc ctc cca gta cgt tgt gtg Lys Trp Ile Ile Lys Ser Asn Tyr Gln Gly Leu Pro Val Arg Cys Val 175 180 185 190	757
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40	tgt gtg gat gat gca tat gtg aga aga atg gca gct gag cct gag tgg Cys Val Asp Asp Ala Tyr Val Arg Arg Met Ala Ala Glu Pro Glu Trp 225 230 235	901
45	cag aaa gca ggt gct cct cct tca ggg tct gca gtg agt acg gct Gln Lys Ala Gly Ala Pro Pro Ser Gly Ser Ala Val Ser Thr Ala 240 245 250	949
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55	att gct gac ctg gga aat gct tgt tgg gtg cat aaa cac ttc acg gaa Ile Ala Asp Leu Gly Asn Ala Cys Trp Val His Lys His Phe Thr Glu 530 535 540	1813
60	gac atc cag acg cgt cag tac cgc tcc ata gag gtt tta ata gga gcg Asp Ile Gln Thr Arg Gln Tyr Arg Ser Ile Glu Val Leu Ile Gly Ala 545 550 555	1861
	ggg tac agc acc cct gcg gac atc tgg agc acg gcg tgt atg gca ttt Gly Tyr Ser Thr Pro Ala Asp Ile Trp Ser Thr Ala Cys Met Ala Phe 560 565 570	1909
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	tat tcc aga gac gaa gac cac ata gcc cac atc ata gag ctg cta ggc Tyr Ser Arg Asp Glu Asp His Ile Ala His Ile Ile Glu Leu Leu Gly 595 600 605	2005

	agt att cca agg cac ttt gct cta tct gga aaa tat tct cg <sup>g</sup> gaa tt <sup>c</sup>	2053
	Ser Ile Pro Arg His Phe Ala Leu Ser Gly Lys Tyr Ser Arg Glu Phe	
	610 615 620	
5	ttc aat cgc aga gga gaa ctg cga cac atc acc aag ctg aag ccc tgg	2101
	Phe Asn Arg Arg Gly Glu Leu Arg His Ile Thr Lys Leu Lys Pro Trp	
	625 630 635	
10	agc ctc ttt gat gta ctt gtg gaa aag tat ggc tgg ccc cat gaa gat	2149
	Ser Leu Phe Asp Val Leu Val Glu Lys Tyr Gly Trp Pro His Glu Asp	
	640 645 650	
15	gct gca cag ttt aca gat ttc ctg atc cc <sup>g</sup> atg tta gaa atg gtt cca	2197
	Ala Ala Gln Phe Thr Asp Phe Leu Ile Pro Met Leu Glu Met Val Pro	
	655 660 665 670	
20	gaa aaa cga gcc tca gct ggc gaa tgt cgg cat cct tgg tt <sup>g</sup> aat tct	2245
	Glu Lys Arg Ala Ser Ala Gly Glu Cys Arg His Pro Trp Leu Asn Ser	
	675 680 685	
	tag caaattctac caaatattgca ttctgagcta gcaa <sup>a</sup> atgttc ccagtacatt	2298
25	ggaccta <sup>a</sup> ac ggtgactctc attcttaac aggattacaa gtgagctggc ttcatcctca	2358
	gac <sup>c</sup> tttatt ttgcttgag gtactgtt <sup>g</sup> ttgacatttt gctttt <sup>t</sup> gt <sup>c</sup> cactgtgatc	2418
30	ctggggagg gtagtctttt gtctcagct aagtagtt <sup>a</sup> ctgaccattt tcttctggaa	2478
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35	tat <sup>t</sup> tttagct gagtactata taat <sup>t</sup> tacaa tcttaagaaa ttatcaagtt ggaaccaaga	2658
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	ggatacaa <sup>a</sup> ac catagtaggc aatacaattt agaatgtaat atatagaggt atattagcct	3498

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 20 25 30  
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 35 40 45  
 Ile Leu Gly Ser Asp Asp Glu Glu Gln Glu Asp Pro Ala Asp Tyr Cys  
 50 55 60  
 Lys Gly Gly Tyr His Pro Val Lys Ile Gly Asp Leu Phe Asn Gly Arg  
 65 70 75 80  
 Tyr His Val Ile Arg Lys Leu Gly Trp Gly His Phe Ser Thr Val Trp  
 85 90 95  
 30 Leu Cys Trp Asp Met Gln Gly Lys Arg Phe Val Ala Met Lys Val Val  
 100 105 110  
 Lys Ser Ala Gln His Tyr Thr Glu Thr Ala Leu Asp Glu Ile Lys Leu  
 115 120 125  
 35 Leu Lys Cys Val Arg Glu Ser Asp Pro Ser Asp Pro Asn Lys Asp Met  
 130 135 140  
 Val Val Gln Leu Ile Asp Asp Phe Lys Ile Ser Gly Met Asn Gly Ile  
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 His Val Cys Met Val Phe Glu Val Leu Gly His His Leu Leu Lys Trp  
 165 170 175  
 40 Ile Ile Lys Ser Asn Tyr Gln Gly Leu Pro Val Arg Cys Val Lys Ser  
 180 185 190  
 Ile Ile Arg Gln Val Leu Gln Gly Leu Asp Tyr Leu His Ser Lys Cys  
 195 200 205  
 45 Lys Ile Ile His Thr Asp Ile Lys Pro Glu Asn Ile Leu Met Cys Val  
 210 215 220  
 Asp Asp Ala Tyr Val Arg Arg Met Ala Ala Glu Pro Glu Trp Gln Lys  
 225 230 235 240  
 Ala Gly Ala Pro Pro Ser Gly Ser Ala Val Ser Thr Ala Pro Gln  
 245 250 255  
 50 Gln Lys Pro Ile Gly Lys Ile Ser Lys Asn Lys Lys Lys Leu Lys  
 260 265 270  
 Lys Lys Gln Lys Arg Gln Ala Glu Leu Leu Glu Lys Arg Leu Gln Glu  
 275 280 285  
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 290 295 300  
 Ile Thr Ser Ala Ala Pro Ser Asn Asp Gln Asp Gly Glu Tyr Cys Pro  
 305 310 315 320  
 Glu Val Lys Leu Lys Thr Thr Gly Leu Glu Glu Ala Ala Glu Ala Glu  
 325 330 335  
 60 Thr Ala Lys Asp Asn Gly Glu Ala Glu Asp Gln Glu Glu Lys Glu Asp  
 340 345 350  
 Ala Glu Lys Glu Asn Ile Glu Lys Asp Glu Asp Asp Val Asp Gln Glu  
 355 360 365  
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	370	375	380
	His Ile Glu Asn Gly Pro Phe Ser Leu Glu Gln Gln Leu Asp Asp Glu		
	385 390	395	400
5	Asp Asp Asp Glu Glu Asp Cys Pro Asn Pro Glu Glu Tyr Asn Leu Asp		
	405 410		415
	Glu Pro Asn Ala Glu Ser Asp Tyr Thr Ser Ser Ser Tyr Glu Gln		
	420 425	430	
	Phe Asn Gly Glu Leu Pro Asn Gly Arg His Lys Ile Pro Glu Ser Gln		
	435 440	445	
10	Phe Pro Glu Phe Ser Thr Ser Leu Phe Ser Gly Ser Leu Glu Pro Val		
	450 455	460	
	Ala Cys Gly Ser Val Leu Ser Glu Gly Ser Pro Leu Thr Glu Gln Glu		
	465 470	475	480
15	Glu Ser Ser Pro Ser His Asp Arg Ser Arg Thr Val Ser Ala Ser Ser		
	485 490		495
	Thr Gly Asp Leu Pro Lys Ala Lys Thr Arg Ala Ala Asp Leu Leu Val		
	500 505	510	
	Asn Pro Leu Asp Pro Arg Asn Arg Asp Lys Ile Arg Val Lys Ile Ala		
	515 520	525	
20	Asp Leu Gly Asn Ala Cys Trp Val His Lys His Phe Thr Glu Asp Ile		
	530 535	540	
	Gln Thr Arg Gln Tyr Arg Ser Ile Glu Val Leu Ile Gly Ala Gly Tyr		
	545 550	555	560
25	Ser Thr Pro Ala Asp Ile Trp Ser Thr Ala Cys Met Ala Phe Glu Leu		
	565 570	575	
	Ala Thr Gly Asp Tyr Leu Phe Glu Pro His Ser Gly Glu Asp Tyr Ser		
	580 585	590	
	Arg Asp Glu Asp His Ile Ala His Ile Ile Glu Leu Leu Gly Ser Ile		
	595 600	605	
30	Pro Arg His Phe Ala Leu Ser Gly Lys Tyr Ser Arg Glu Phe Phe Asn		
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	Arg Arg Gly Glu Leu Arg His Ile Thr Lys Leu Lys Pro Trp Ser Leu		
	625 630	635	640
35	Phe Asp Val Leu Val Glu Lys Tyr Gly Trp Pro His Glu Asp Ala Ala		
	645 650	655	
	Gln Phe Thr Asp Phe Leu Ile Pro Met Leu Glu Met Val Pro Glu Lys		
	660 665	670	
	Arg Ala Ser Ala Gly Glu Cys Arg His Pro Trp Leu Asn Ser		
	675 680	685	

40